City of Harrisonburg, Virginia

Bidder's Package

PAN AND TILT CAMERA

March 23, 2012

Proposals must be delivered to:

Pat Hilliard, Purchasing Agent
City of Harrisonburg, VA
2111 Beery Road
Harrisonburg, VA, 22801

Proposal Due: May 3, 2012 @ 2:00 pm

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SECTION 1: INVITATION TO BID
March 23, 2012

BID TITLE: Pan and Tilt Camera and Crawler
BID OPENING DATE: May 3, 2012, at 2:00 p.m.

The City of Harrisonburg is seeking bids from qualified vendors to provide a new pan and tilt sewer inspection camera and crawler, with functional software, in the City's existing Camera truck as specified herein. Any questions regarding the specifications for this bid should be directed to Mike Higgs, Public Utilities Crew Supervisor at (540) 494-9959. Bidders will be required to submit:

- Bid Form (Section 2) completed and signed by authorized representative,
- Product and Services Specifications documents (Section 4) with each item clearly marked for compliance or exceptions
- If applicable, Section 5 with corresponding identification of the details for all exceptions noted in Section 4.
- Warranty Information
- Manufacturer's standard literature for all equipment and complete specifications for each.
- Listing of three (3) references currently using the proposed camera and crawler Including the company or municipality, address, contact name, email address, and telephone number.

Bid Packages can be obtained from:

Pat Hilliard
Purchasing Agent
2111 Beery Road
Harrisonburg, VA 22801

All bids shall be submitted in a sealed envelope plainly marked "**PAN AND TILT CAMERA FOR THE CITY OF HARRISONBURG, VIRGINIA ON MAY 3, 2012**", with the name and address of the bidder in the upper left hand corner and accompanied by all information requested in previous paragraph. E-Mail and facsimile responses are not acceptable. No responsibility will attach the Owner or any official or employee thereof for the pre-opening of, post-opening of, or the failure to open a proposal not properly addressed and identified. Bids received after the date and time specified will be rejected. Bids shall be sealed, marked, and delivered to:

Mail or Deliver To:
Pat Hilliard
Purchasing Agent
2111 Beery Road
Harrisonburg, VA 22801

SECTION 2
BID FORM FOR ZOOMING PAN & TILT CAMERA SYSTEM COMPLETE

	DESCRIPTION	TOTAL COST
1.	**PART A – GENERAL REQUIREMENTS**	$_____
2.	**PART B: ZOOMING PAN & TILT COLOR CAMERA**	$_____
3.	**PART C: MOTORIZED CRAWLER**	$_____
4.	**PART D: SYSTEM CONTROL CENTER (SCC)**	$_____
5.	**PART E: SOFTWARE ARCHITECTURE**	$_____
	SUBTOTAL PARTS A THROUGH; BASE BID	$_____
6.	**PART F: PORTABLE PUSH SYSTEM**	$_____
7.	**PART G: POLE MOUNTED CAMERA PACKAGE**	$_____
8.	**PART H: INSTRUCTION & TESTING**	$_____
9.	**PART I: ENHANCED SUPPORT PLAN**	$_____
10.	**PART J: TRADE IN FOR EXISTING EQUIPMENT**	$_____
	TOTAL ALL PARTS A THROUGH J	$_____

Bidder guarantees delivery within _____ days after receipt of order for the above products and services at the above prices.

BIDDER/COMPANY NAME: _____

TYPED NAME OF BIDDER: _____

STREET ADDRESS: _____

CITY AND STATE: _____

FEDERAL ID NUMBER: _____

PHONE: _____ FAX: _____

SIGNATURE OF AUTHORIZED BIDDER: DATE:

_____ _____

SECTION 3
AWARD OF CONTRACT

The BID FORM from Section 2 shows ten separate components of which the bidder shall complete as part of the bid submittal. Items A through E are considered to be the absolute minimum package that the City would award; however, exceptions could prevail. Items F through J are ancillary to the base package but highly desired by the City. As such and in the consideration of cost, the City will consider the combination of any subset of items A through J in its award. Combination of items will only be taken from a single bidder and then compared against other bidders in the same format; the award will be made to one bidder.

City will award this bid on a "**BEST VALUE BASIS**". The best value basis shall consider ability to video sanitary sewer lines as small as 4" in diameter and ability to upgrade to video sanitary lines 24" or 30" in diameter. The award will be made to the lowest responsible bidder submitting no exceptions or to a bidder submitting an exception(s) that is (are) determined favorable in terms of delivery time, reliability, familiarity, sustainability, serviceability and maintainability of the system. The City reserves the right to accept or reject bids on each item separately or as a whole, to reject any or all bids, to waive informalities or irregularities, to negotiate contract terms and options with the successful low bidder, and to contract for the bid to other than the lowest bidder in the best interest of the City of Harrisonburg.

SECTION 4
PRODUCT & SERVICES SPECIFICATIONS

INTENT OF SPECIFICATIONS

The purpose of these specifications is to secure for the City of Harrisonburg a **PAN AND TILT SEWER INSPECTION CAMERA, CRAWLER, CONTROL SYSTEM, CCTV SOFTWARE WITH GIS INTEGRATION AND PACP CONDITION SCORING PROVISIONS, & ACCESSORIES**, as described herein. The camera shall be capable of inspecting 6" – 24" sanitary sewer lines.

PART A – GENERAL REQUIREMENTS

A.1 Bidder acknowledges and complies with City of Harrisonburg Purchasing Guideline & Policies, and all Federal, State and local laws and regulations. Furthermore, bidder conveys that no tax shall be included in the bid.

A.1 100% COMPLIES: YES
or
A.1 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

A.2 No bid bond is required provided Bidder agrees that upon successful award of contract, should the awarded bidder fail to deliver the product and services as required in this contract, that awarded bidder will be responsible for all costs incurred to the City to rebid and re-award the said product and services.

A.2 100% COMPLIES: YES
or
A.2 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

A.3 The complete system shall be delivered to the City of Harrisonburg Public Utilities Department, 2155 Beery Road, Harrisonburg, Virginia, 22801. The system shall be fully assembled and ready to operate at the time of delivery. The bidder shall submit within the Bid Form (Section 2) a firm delivery time. All transportation charges shall be included in bid price.

A.3 100% COMPLIES: YES
or
A.3 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

A.4 The owner will be provided ten working days to inspect the system upon arrival; acceptance is a requirement to payment. The Owner may withhold total payment if the functionality of the system is in jeopardy of meeting the performance requirement; or it may elect to withhold partial payment in the amount of 200% of cost of the system component that is not acceptable.

A.4 100% COMPLIES: YES

or

A.4 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

A.5 The bidder shall hold effective for 90 days the bid price as submitted; this requirement shall supersede conditions of Section 6. The owner will make determination of the best value for the City and thereby offer the award of contract within this time.

A.5 100% COMPLIES: YES

or

A.5 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

A.6 The City requires a complete and operable TURN-KEY system. Therefore, all items needed to operate the unit, whether or not specifically mentioned in the specifications, shall be supplied at the price bid. All equipment, materials and workmanship shall be of the highest grade in accordance with modern practices and all equipment supplied will be new and unused. All bidding parties shall have factory trained technicians capable of diagnosing and repairing problems with a parts department stocking factory parts at its facility. In preparation, the City will remove all equipment from the current CCTV sewer inspection vehicle. The successful bidder shall retrofit the truck at the owner's site. Insurances stated in Section 6 shall be required before initiation of any work. Alternative work site arrangements may be considered.

A.6 100% COMPLIES: YES

or

A.6 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

A.7 The bidder understands that the City requires a warranty period of 1 year for all installed components. The bidder shall be responsible for all warranty repairs to the self propelled sewer inspection camera system. Warranty work for the self propelled sewer inspection system shall be provided within a 200-mile radius of the City of Harrisonburg. In addition, complete operating manuals shall be furnished for each component of the system.

A.7 100% COMPLIES: YES

or

A.7. EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

PART B: ZOOMING PAN & TILT COLOR CAMERA

B.1 The camera chassis construction shall include 100% solid state circuitry designed as an industry model to withstand shocks and vibration normally sustained while being pulled through a pipe. The housing shall be fully sealed and waterproof (IP68/UL 2044) to withstand external pressure up to 50 psi minimum without

damage or leaking. The camera mechanics and electronics shall be housed in a high strength, damage resistant 1/8" thick or greater, aluminum housing with a stainless steel tube. Operating temperature ranges of the camera shall be 0 degrees C to 50 degrees C.

The front of the camera head housing shall have a view port of optical grade sapphire. The forward portion of the camera shall not exceed 4.5 inches in diameter and will include the mounting fork, camera head and lighting. The camera forks must be rounded or chamfered and be the same or less diameter as the forward portion of the camera to eliminate any sharp corners that can become caught on obstructions. The mounting fork will accommodate the axial rotation, the optical viewing angle, the lateral pan angle and the pan viewing angle as specified in item B2. The internal lights shall be directional with the moving head for optimum illumination in various pipeline conditions. Camera lighting shall be 4X5 cluster LED's with 480 lumens illumination; color temperature shall be 4,000 degrees K to 4,500 degrees K with 25W power consumption at maximum 12 volts. The two LED light sources within each module must be individually field replaceable and shall be hermetically sealed from the cavity housing the camera module to prevent any moisture entry if field replacement occurs.

The rear portion of the camera shall not exceed 3 inches in diameter to allow for operation in skids and self-propelled units. Unit shall be compatible with: 1) multi-conductor version, 1208 Mainline PCU, 2) Inspector General portable PCU and single-Conductor Version: SC-2000 CCU, 3) multi-conductor version cable; up to 4000' and 4) single-conductor version cable; up to 2000'.

The camera shall be of dimensions such that when assembled to the crawler then the overall dimensions shall comply with specifications set forth in item C3.

B.1 100% COMPLIES: YES

or

B.1 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

B.2 The camera shall pan and tilt allowing for full view of laterals, joints and other various observations. The camera shall pan and tilt at the same time to increase speed of inspection and home position placement when continuing forward. Pan & tilt homing shall be provided to provide quick and easy reorientation. Remote control of pan, tilt, and pan & tilt homing shall be provided. Cameras that require the operator to stop in order to pan and tilt are not acceptable. Rotation shall meet the following specifications:

- Axial Rotation: 360°
- Rotation Optical Viewing Angle: 400°
- Lateral Pan: 285°
- Pan Viewing Angle Range: 331°
- Operate in a 6" Relined Pipe
- Rotational Diameter: 4½" 114.3mm)
- Full Pan (no load): 56 deg/sec, full pan in 5-7 seconds
- Full Rotation (no load): 31 deg/sec, full rotation in 11-13 seconds

B.2 100% COMPLIES: YES

or

B.2 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

B.3 The camera shall have 10x optical zoom and 4x digital zoom; total 40:1zoom capability for viewing laterals and magnifying observations. Remote control of optical zoom, manual focus, automatic focus, shutter speed, frame integration, manual iris, diagnostics and internal lights shall be provided. The lens shall be an automatic iris type with a manual override (controlled from the control console) to control the illumination range for an acceptable picture between 3 and 10,000 lux. The camera shall develop a true color and transmit a sharp image picture on the video bandwidths only. Full color video bandwidths shall be provided with no sacrifice of low frequency response. There shall be no visible streaking of the low frequency test bars when viewing a standard EIA Test Chart. R.F. suppressors subject to local interference shall not be acceptable. Additional electrical and cameral specifications include:

Video Output
· Multi-Conductor Version: 1 V, S/N 46dB or greater
Integrated Lights
· Field Replaceable
Long Life LED's containing (2) each 5 watt cluster
LED's Image
Pick-up Device
·Interline transfer 1/4 inch CCD color
Picture Elements (pixels)
· Solid state ¼" diagonal pixels: 768 (H) x 494 (V) = 379,392 elements (NTSC)
Lens
· 10x Zoom f=4.2mm to 42mm (F1.8 to F2.9)
Digital Zoom
· 4x (40x with optical zoom)
Field of View
· 56° diagonal, 46° (H) wide, 4.6° (H) tele end
Resolution Lines
· 470 TV lines horizontal
Electronic Shutter
¼ s to 1/10,000 s, 20 steps
Minimum Illumination
- 3 lux @ F/1.4
Input Camera Voltage
· Single-Conductor Version: 64V to 160V
· Multi-Conductor Version: 20-72V from controller Head

B.3 100% COMPLIES: YES
or
B.3 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

B.4 The camera will contain built in self diagnostics to facilitate troubleshooting. Items such as humidity, temperature, camera voltage, amperage, light voltage, camera hour meter, and camera serial number will display on the monitor screen on demand.

B.4 100% COMPLIES: YES
or
B.4 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

B.5 The system shall be supplied with a built in pipe grade verification system to detect and record variations in pipe angle from true horizontal. The inclinometer shall be able to read and transmit pipe grade variations of + 5 degrees from horizontal (+ 8.7% grade) with an error of ± 0.1 degree. Depending on the data system used in conjunction with the inclinometer, the data shall be able to be displayed in a numerical or graphical format, which may be printed or exported to an external database. The inclinometer shall include a vertical sensing, single axis, precision sensor mounted internally to the camera.

B.5 100% COMPLIES: YES
or
B.5 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

B.6 The system shall be supplied with a sonde accessory to accurately locate the camera in metallic and non-metallic pipe. Unit field strength measurement reference is method FR-1 receiver with meter reading of "0" at 30 feet in air. The operating frequency shall be 512 Hz; uses crystal stabilized frequency control with 12 volts power supply shared with internal lights power supply. The drive circuit shall be a square circuit board to match the inclinometer sensor footprint to ensure that the mounting hardware can be shared. The transmitter antenna coil shall be built into a modified connector housing.

B.6 100% COMPLIES: YES
or
B.6 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

B.7 The unit shall be labeled and listed as a minimum by a Nationally Recognized Testing Laboratory (NRTL) to the applicable Standard for Safety for Closed Circuit Television Equipment, UL 2044, 2nd edition, 11/9/01. Documentation by a NRTL laboratory must be supplied that the aforementioned equipment is acceptable as defined by 29 CFR 1910.399 and required by 29 CFR 1910.303(a).

B.7 100% COMPLIES: YES
or
B.7 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

PART C: MOTORIZED CRAWLER

C.1 The tractor unit shall have self propelled functions with transmission proven to provide power forward, power reverse and free wheel capabilities. Unit shall have full, variable speed in power forward or power reverse modes. Unit shall have speed and direction controlled from the control console. Unit shall include a heavy-duty, waterproof, drive motor specifically designed to meet the power requirements of the system, regardless of size of pipe being inspected. Unit shall be equipped with a bulkhead connector to provide protection against leaks and motor damage. Unit shall be retrievable in the free wheel mode by the video cable reel to reduce the normal wear on the drive motor and drive train by 50%. Power reverse only features that require operator coordination of transport and cable are not acceptable (cable damage).

C.1 100% COMPLIES: YES

or

C.1 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

C.2 The transporter unit and accessories shall be provided for inspecting pipelines ranging in diameter sizes shown below. The transporter assembly shall be designed with the ability to position the camera and lighting system to the centerline of the pipe being inspected while providing protection from offsets and in-line obstructions. Weighted track width adjustment bars shaft extenders & pipe adapters shall be provided to position the camera and lighting system to the centerline of the pipe being inspected. Transporter weights shall increase for each pipe size as follows:

Pipe Size (Inches)	6"	8"	10"	12"	15"	18"	24"
Weight w/Camera (Lbs)	40	42	46	50	52	64	76
Weight w/o Camera (Lbs)	26	28	32	36	38	50	62

Unit shall be equipped with a dual fastened, rubber cleat, and power track drive system designed to maximize traction in each pipe size. Unit shall include self-cleaning, agricultural type, steel sprockets to prevent chain binding. Unit shall include a heavy-duty drive motor specifically designed to meet the power requirements of the system, regardless of size of pipe being inspected. Additional chain links kit shall be provided.

C.2 100% COMPLIES: YES

or

C.2 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

C.3 The combined transporter and the pan & tilt camera shall have a minimum of 1" top clearance1" bottom clearance, and 5/8" clearance on both sides in a 6" pipe. The combined length of the transporter / pan & tilt camera assembly shall not exceed 31.5" with the camera in the home position. This will allow the inspection and traversing of 6" diameter off set, meandering, or relined pipe; it will also facilitate entry into short inverts.

C.3 100% COMPLIES: YES

or

C.3 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

C.4 The City currently owns a cable and reel component to its existing system (CUES MO316-2); these components must be integrated into the new system configuration. The supplier shall provide all hardware, labor, equipment, materials and ancillaries to make this integration and to assure that automatic payout of cable becomes an added feature.

C.4 100% COMPLIES: YES

or

C.4 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

C.5 The unit shall be labeled and listed as a minimum by a Nationally Recognized Testing Laboratory (NRTL) to the applicable Standard for Safety for Closed Circuit Television Equipment, UL 2044, 2nd edition, 11/9/01. Documentation by a NRTL laboratory must be supplied that the aforementioned equipment is acceptable as defined by 29 CFR 1910.399 and required by 29 CFR 1910.303(a).

C.5 100% COMPLIES: YES
or
C.5 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

C.6 A conversion kit shall be supplied to allow the City to use its existing crawler unit (CUES Ultra Shorty) to be used with the new camera as a spare unit to the new crawler.

C.6 100% COMPLIES: YES
or
C.6 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

PART D: SYSTEM CONTROL CENTER (SCC)

D.1 The Power Control Unit (PCU) portion of the SCC must be capable of operating a mini camera, pan & tilt camera, pan & tilt zoom camera used with skids without the use of external adapter modules. The PCU shall provide all the necessary power to operate and monitor the television inspection system. The faceplate shall be heavy gauge aluminum finished with an industrial grade finish. The PCU shall operate from a 110VAC or 220VAC 50Hz. or 60 Hz. power source. All circuits shall be of solid state design. Circuits shall be isolated to provide operator protection from electrical shock hazards. The PCU shall contain a solid state light head power source, a left transporter motor power source, a right transporter motor power source, and a camera power source. All four power sources will include electronic over current protection to protect connected equipment from excess current. The PCU circuit protection will prevent damage to the PCU in the event of a cable short and shall recover immediately without operator action after the short condition is removed. All four power supplies shall be voltage controlled and current limit controlled by the Camera Control Unit without operator action.

D.1 100% COMPLIES: YES
or
D.1 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

D.2 A Camera Control Unit (CCU) shall connect to and control all functions of the PCU, the camera, and the transporter. The CCU faceplate shall be heavy gauge aluminum finished with an industrial grade finish. External connections shall include two buffered external video monitor outputs, two USB ports, audio and video VCR/DVD input/output plugs. The CCU will also include hardware and software to display video, system configuration and diagnostic conditions with a

built-in alpha/numerical video character generator. The character generator shall generate footage count, defect information, and/or free-form comments, for display on a video monitor and video recording units.

The CCU software shall be field upgradable with a USB thumb drive. The CCU shall also be capable of full external control by Asset Inspection/Decision Support software. The CCU software will include cable diagnostics which can determine an open or short in the mainline cable. It will also allow monitoring of the voltage and current on all four power supplies and testing the handheld controller.

A standard (IBM) "QWERTY" keyboard shall be provided for generating defect and commentary entry. The format and position of the on-screen data shall be adjustable, within the video display, to fit pipe conditions or operator requirements. An inspection report can be saved and exported in an ASCII file format. The data generator shall have the capability send an inspection report copy containing contract data, footage and defects to a USB thumb drive. The inspection report shall include the following minimum information: date of inspection; pipe size, material, total length; upstream access location; downstream access location; direction of inspection (N-S-E-W and upstream/downstream); name of line; lateral location and footage; observations and comments (6 lines) , 55 preprogrammed defect codes and 70 user definable.

D.2 100% COMPLIES: YES

or

D.2 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

D.3 System shall be provided with a rack mounted computer conforming to the following:

- Motherboard with 1156 Socket and Intel P55 Chipset
- Genuine Intel Core i7-870 Lynnfield 2.93 GHz Processor
- Two (2) GB of DDR3 (Double Data Rate) 1333 RAM
- USB Video Capture Device for MPEG 1 / 2 / 4 / WMV
- Video Graphics Card, Supporting up to 512MB, 16x PCI-Express
- LAN, On Board Network Connection, Realtek 8112L 10 / 100 / 1000 Mbps
- USB 2.0 Ports (8 on Rear, 2 on Front)
- Minimum 3 RS232 Serial Ports
- On Board Sound
- DVD + / - RW DVD Burner 20x / CD - RW 40x Internal
- 500 GB (7,200 RPM) SATA Hard Drive
- 64 GB Solid State Drive, SATA2
- 650 Watt ATX Power Supply
- Industrial Hardened Case with:
- Air Filtering, Vibration Dampening Hard Drive Mount
- Peripheral Cards Support Bar
- 19" (482.6mm) Rack
- Windows 7 Professional 64 Operating System
- User Guide - Hard Copy
- User Guide - CD

D.3 100% COMPLIES: YES

or

D.3 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

D.4 System shall be provided a 19” color flat screen LCD monitor of high quality, ultra-thin, industrial grade color providing a minimum of 1440 x 900 pixels of resolution. Unit shall include 16:10 aspect ratio displays HD content with no stretching or blurring. Unit shall be a desk-mounted 19" LCD computer display and shall include a user-friendly, on-screen menu for easy parameter adjustments. The unit shall be compatible with the NTSC signal. [PAL version available] and shall have the ability to automatically monitor / adjust the video input and optimize the display settings without manual adjustments. An on-screen menu for adjusting monitor parameters is required. The menu shall include a user-friendly graphical interface to guide users through the customization of features and individual preferences. The unit shall operate from a 100-240VAC power source and shall be black in color. Approximate dimension and weight are 17.4" x 14.8" x 6.1" and 10.4 lbs, respectively.

D.4 100% COMPLIES: YES
or
D.4 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

D.5 For mounting in the rear of the control center the system shall be equipped with a second 19” color flat screen LCD monitor meeting the specifications of item D4 above.

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D.5 100% COMPLIES: YES
or
D.5 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

D.6 As an extension of the SSC, the system shall be provided a hand held portable controller for the pan & tilt type camera, transporter and reel. The controller will be capable of wired operation, and include a weatherproof 24 key membrane panel with indicator lights. Joystick controls will be provided for camera pan and tilt operation and transporter forward and reverse functions. Camera controls will include focus and iris override, zoom, lights and light intensity, pan and tilt homing, one button auto focus, and diagnostics. Transporter controls will include cruise control operation. Reel controls will include retrieve and release mode, and speed controls. The controller shall be fabricated of a high impact plastic material, and housed in a neoprene boot for protection. A holster shall be provided for storing the remote at the control unit.

D.6 100% COMPLIES: YES
or
D.6 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

PART E: SOFTWARE ARCHITECTURE

E.1 GENERIC CCTV SOFTWARE SPECIFICATIONS FOR ASSET MANAGEMENT & DECISION SUPPORT SOFTWARE FROM CUES

Functional Requirements of the Software

- The inspection software shall fully support CMOM activities as defined by the US EPA
- The inspection software shall support GASB 34 regulations
- The software shall be NASSCO PACP and MACP version 4.4 certified and will conform to its asset assessment procedures.
- The software shall offer the ability to quickly click on an asset and see all of the history performed against that asset.
- The software's data entry interface shall be intuitive, easy to use, and able to provide on-line help files within the software to assist remote users with questions they may have.
- It shall use familiar Microsoft layouts or "panes" that are customizable screens for each user's preferences and job responsibility.
- It shall offer tool bars, drop - down menus, "auto - complete" features to speed data entry, and display data with easy Microsoft tree structures.
- Users shall be able to "single click" to burn CD / DVD's or generate reports.
- The core software or "standard" inspection lite edition used in the field shall maintain a complete database of infrastructure assets (pipelines, manholes, lateral service connections, lift stations, etc.).
- The software shall enable users to immediately point to a defect within the video stream.

Technical Requirements of the Software

- The software shall be coupled with a firmware controller to receive multiple, simultaneous inputs from connected devices to, for example, allow mainline footage, lateral footage, and inclination data to be received into the software without the need for manual input from multiple keyboards.

Database Structure and Requirements

- The inspection database shall include an asset - based architecture which allows multiple inspections to be performed and retained as a historical record for the same physical location (asset). The "project - based" database architecture shall store and immediately show all inspection history for each asset.
- The software shall be able to import an entire asset database.
- The software shall have the ability to import and retain the entire list of assets despite not ever having generated an inspection.
- The inspection database shall have the ability to support and synchronize with multiple data sources, such as Microsoft Access, or SQL Server. All or part of the data shall be capable of being duplicated between inspection databases and exported into multiple formats, such as Granite XP, Access, PACP, Azteca, Hansen, Maximo, GBA, RJN, and ASCII. All or part of the inspection and asset information shall be able to be synchronized between the field and office with built-in automatic validation and error checking.
- The software must be based on Microsoft Windows and be a 32 bit Windows application, compatible with Windows 7, Windows XP SP2 / SP3, and Windows 2000.
- The software must be capable of connection to external systems via an

ODBC or OLE DB connection.

- The collected CCTV survey data shall be stored in either Microsoft Access, SQL or Oracle tables, and be available for use by the system owner.
- Databases shall be able to be created in the default directory or on any writable drive available.
- The Database structure shall have the ability to use Microsoft Jet Engine 4.0 files, Microsoft Access, or an OLE DB database, such as Microsoft SQL Server.
- The database shall support simultaneously the following code systems: WRC, PACP, CUES standard and individual custom codes. The "Customer" shall provide the "Contractor" the code requirement prior to inspection creation. The code editor shall provide the ability to add, modify, and / or delete the code systems per the inspection requirements or user's preferences. Each project shall be able to utilize a different code system and units of measurement based on the "Customer" inspection requirements. The "Customer" shall have full and independent access to the code editor for customization needs without the use of third party applications.
- The database structure shall retain information on the various structures found within a Sewer, Storm, or combined system. It is important that the structures, nodes, manholes and pipe identifiers and related attribute information be retained as separate tables from the inspection allowing import of existing data from multiple sources. The data structure allows different projects to reside within a single database. Information gathered in projects shall be available to view by project or by system. Data gathered during project inspection shall be available to view by the selected structure. Therefore, all inspections can be viewed on a structure even if gathered in different projects.

Digital Video Format Capabilities and Requirements

- Digital video files (Inspection Videos) shall be captured and / or recorded in the MPEG1, 2, or 4 formats or as specified by the City or County. The Video capture files shall be in MPEG format with linking to the database file(s) (Inspection Observations). The "link" of the video capture file to the database observation file is required and each Observation shall record the name of the video file and the frame number referencing the time in the video when the inspection was made. The inspection observation(s) shall link to the video record in real time.
- A Main, Lateral, or Node Inspection may have one or many linked video files. Video recording can be paused and then restarted without generating a new file.
- On playback, single click selection of a Main, Lateral, or Node Observation shall start the video from the moment the observation was made, and subsequent selections of observations will "jump" the video playback to the corresponding spot. If no additional observation selection is made, the software will play sequentially all linked videos in the inspection.
- Video linking to pipe inspection observations is a patented and protected technique and only software that holds the appropriate licenses is deemed acceptable.

Image (Photos) Capture Format Capabilities and Requirements

- The Inspection image files (pictures) shall have the ability to be exported to Industry Standard Formats to include JPEG, BMP, and TIFF formats and will be transferable by disk, DVD, and / or External Hard Drive to an external personal computer utilizing standard viewers and printers.

- The video image capture module shall be capable of collecting multiple color video frames of the defects found during inspection and then linked to the inspection reports. There shall not be a limitation to the number of pictures allowed per observation.
- Images or video clips shall be easily launched for viewing during inspection report review.
- Images can be captured and linked to an observation directly from "live" video during the TV inspection, or from the video playback at the office.
- Footage count shall be attached to the corresponding video image and shall appear on the reports indicating the correct footage when the image was captured during the pipeline inspection.
- Shall be able to print any captured image on the ink jet color printer in the inspection truck. Picture files shall be stored and exported with inspection data.
- A "thumbnail" preview of all pictures at an observation shall be available. The pictures shall be able to be expanded from thumbnail to window to full screen by utilizing the mouse.

Export of the Database - Capabilities and Requirements

- The database, videos, and pictures shall have the ability to be "Exported". Export is the process of selecting all or portions of the original data, video, and pictures and creating a complete and independent copy of this information, which can be run independently or synchronized by a City's or County's office program.
- The office program shall have the ability to select the Assets and Projects to transfer to a particular database.
- All or part of a database can be exported from the TV Inspection database with or without videos and pictures. This new file can be burned to a CD / DVD, or transferred to a USB hard drive and brought into the office from the truck or to the truck from the office. If the TV Inspection system is connected to the customer's computer network, it will be possible to export the data directly to the master or central database.
- The NASSCO export process will validate the PACP and MACP data and reject any non - compliant inspections, notifying the user via log files so that a corrective action can be implemented.

Synchronization Capabilities and Requirements

- The application shall have the ability to synchronize with assets and inspections from exported databases.
- The synchronization process shall have built-in error checking for duplicates, conflicts, updates, and any modifications to the data being synchronized using a unique hash revision control mechanism for every data object.
- The software shall have an OPTIONAL Scheduler module that allows for a daily, weekly, or monthly scheduled transfer of information between two databases (i.e., central office to truck, truck to master database, etc.). Inspections for an asset shall be able to be sent to the truck from the office.
- Synchronization and Exporting activities can be independently scheduled.
- Log files must be created for review purposes.
- During the synchronization process, validation dialogs shall be used to allow the users to select which data takes precedence when a conflict is challenged.
- All filtering capabilities previously described must be available for all exporting and synchronization tasks.
- The application will allow for multiple sources of data to be effectively

consolidated into a single unitary database for analysis and evaluation.

Televising Survey Collection / Reporting Capabilities and Requirements

- The software's basic module shall be capable of providing complete survey reports.
- The software shall be capable of customization with the ability to modify / add to the pipeline condition descriptions / codes and to group them for ease of use.
- The software shall allow footage reading from the existing mainline and lateral camera equipment to be automatically entered into the current survey record and directly correspond to the noted defect location throughout either the main or lateral pipe graph and tabular reports generated.
- A context - sensitive, complete on - screen help file should be available.
- Drop - down boxes shall be available to quickly reference common information such as defects, pipe materials, survey purpose, locations, pipe usage, etc.
- Multiple windows shall be allowed so as to display live video compared to recorded video and / or recorded snapshots.
- The software's basic module database shall have the means to sort in ascending and descending order according to date, pipe ID, street name, structure ID, observed footage, pipe materials, pipe diameters, work order numbers, etc.
- Summary reports compiling data from multiple inspections shall be available. Reporting order shall be user defined.
- Individual inspection summary reports shall also be available and tabulate pipe survey results.
- Quarter section (or map or project areas) summary reports are to be made available so that all surveys within a quarter section are listed showing purpose of inspection, dates, work order numbers, structure ID's, street names, and total lengths.
- A report showing defects by inspection shall be available and programmable to list specific defects observed with corresponding footage, starting, and ending manhole numbers, structural pipe defects (i.e. cracks, offsets, defective laterals, collapsed pipe, etc...) and service oriented defects (i.e. roots, grease, obstructions, infiltration, etc.).
- A report showing grading scores shall be available and summarize the structure ID's, pipe material and pipe diameter, and the grade scores for each survey with totals.
- Reports showing service and structural aspect scoring shall also be available and shall list the pipe ID, total observed length, number of defects and total score with reference to the condition of the total pipe, average of the pipe, total defects and average of defects.
- The software shall allow users to create additional reports as needed.
- The data structure shall allow different projects to reside within a single database. Information gathered in projects shall be available to view by project or by unique system ID number or asset ID. Data gathered during the project inspection shall be available to view by the selected structure. Therefore, all inspections can be viewed on a structure even if gathered in different projects.
- The data structure shall allow for the entire asset data inventory to be created or imported even if no inspections have been performed on the assets.
- The software shall allow the user to track pipe cleaning operations and perform cleaning surveys using dedicated data fields and procedures. The

Granite XP Cleaning Code System is deployed on sewer and storm water cleaning, jetting and pumping vehicles (Vactor, Vac - Con, Pipe Hunter, Guzzler, etc.) to integrate cleaning activities to CCTV operations for more effective coordination and management of labor and equipment. Cleaning crews can flag failing assets needing immediate attention as well as lines that have been cleaned and are ready for CCTV inspection or part of an overall maintenance program.

Televising Viewer Capabilities and Requirements

- A viewer module shall be available for viewing all collected data and shall allow users to:
- View or print all available pictures.
- View all available video files.
- Review or print individually all available reports.
- View all data in the same format as the main software application.
- Use GIS map within the viewer to select assets, review inspections, and run reports.
- Use predefined and custom filters to search and sort the information and reports.

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GIS and GPS Requirements

- The inspection software will integrate with GIS, GPS, and selected CMMS systems.
- The Database and Software program shall be able to import and export asset data, Inspection Observations, and pipeline inspection scores from an ArcGIS 9.3 shape file, personal geo-database file, or ArcSDE files utilizing the network features to associate Sewer, Storm, or combined Mains with corresponding Node and Lateral Assets.
- Both an "import" and "export" profile shall be provided in the software to strictly control the attributes exchanged between the systems.
- The software shall provide the ability to browse to the profile location to select different profiles.
- The "import" and "export" profiles shall allow for data type conversions when the source and destination field types are not the same (i.e., allow for data type conversion of a float to an integer).
- Imported asset data from GIS, as well as exported asset data to GIS shall be filterable to bring in all asset data (full asset inventory) or selected assets / pipelines.
- The inspection software shall allow linear references to be created in GIS with corresponding hyperlinks to spawn video, still images, and other data from the inspection software or an ESRI GIS application.
- An interactive and integrated GIS map shall be viewable from within the application and allow for the initiation of inspection, creation of multiple inspections in a project format, viewing, exporting, burning, and reporting of inspections for selected assets, map layer management, and customizable filtering capabilities for selection of map features.
- The software shall provide an ArcGIS - style identify tool on the integrated map view pane.
- The software shall provide an ArcGIS - style measure tool on the integrated map view pane.
- The software shall provide an ArcGIS - style find tool on the integrated view pane.
- The software shall collect real - time submeter accurate GPS coordinates wirelessly from the field for located structures.

- The software shall allow collection / storage of GPS coordinates imported from an existing GIS database.
- The inspection software shall provide a "zoom to GPS location" capability when a GPS device is connected to show the location of the inspection vehicle or a particular known structure's location.
- The software shall enable structures, observations, entry points, etc., to be estimated with GPS coordinates as a linear reference.
- The software shall provide the ability to select multiple inspections and provide an estimated GPS coordinate for all observations.
- The software shall provide the ability to estimate GPS coordinate for a node asset using the inspection observation's estimated coordinate.
- The software shall provide the ability to use the GIS map within the viewer to select assets, review inspections, and run reports.
- The software shall provide the ability to import GIS subtypes.
- The software shall provide the ability to check and / or correct the GIS source file name if that name and / or location changes between imports.
- The software shall provide the ability to estimate node asset coordinates by clicking on a map.
- The software shall provide the ability to zoom to a selection in the map view pane from a navigator context menu.

Televising Data Analysis / Reporting Capabilities and Requirements

- Users shall have the ability to check for invalid data. To avoid corruption, data gathered from the field inspection shall be error checked. Inconsistent or erroneous data shall automatically be displayed and allow the user or supervisor to add or change data before being input into the database.
- Users shall have the ability to perform data entry and automatically control the video text overlay simultaneously to eliminate the need for dual entry.
- Users shall be able to directly access Oracle 8i, Oracle 9i, and Microsoft SQL Server 2000 / 2005 databases.
- Users shall have the ability to transfer data between the Data Acquisition System and the Software Interface without the need for any user supplied programming, special scripts, or macros.
- The user shall be able to build a code system from active codes.
- The administrator shall be able to select asset and inspection fields that can updated without user verification, therefore allowing quick transfer.
- The application shall have the ability to filter all data using any data field in the application. Filter state should be savable for future use. Multiple filters can be saved. Filters can be defined graphically or by SQL query language.
- Users shall be able to filter the list of mainline inspections or assets to be exported. Users shall be able to select the mainline inspections by:
- Data Acquisition System projects, filtering by: Project name.
- Inspections, filtering by date (from / to), operator name, or work order number.
- In addition, the user shall be able to filter the mainline inspections by Sewer Main Assets:
- The user shall be able to select a list of Main Assets and the inspections associated with the assets shall be displayed.
- The user shall be allowed to select / deselect individual inspections.
- A scoring system incorporated in the software shall assist the user / management personnel in making proper pipe condition assessments. Scoring is to be based upon grades assigned to observation codes and calculated using either standard or customer specific algorithms. Grade can be programmed to be dependent to secondary properties like pipe size,

type, weather, etc. Only administrators shall be allowed / able to make changes to grade and scoring algorithm values.
- Upload / download features shall be available to move surveys, assets, or projects between databases allowing information stored on a truck system to be incorporated into a master database on the City's network or a supervisor's computer. The software program shall be able to combine databases from multiple sources into a master database. A revision control system shall automatically monitor changes and resolve conflicts between databases.

Vendor Requirements
- Vendor shall design, develop, and support the software in the US. The software shall not be designed and supported offshore.
- Vendor shall offer comprehensive Annual Support Plans, which include Web - based troubleshooting tools, online assistance, user forums, and access to downloadable upgrades and documentation via an established Support web site.
- Vendor shall provide references similar in size and scope.

E.1 100% COMPLIES: YES
or
E.1 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

E.2 PACP MODULE SOFTWARE

The module is certified by NASSCO to support the PACP defect identification code system. The system will import and export to the PACP file format.

E.2 100% COMPLIES: YES
or
E.2 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

E.3 ESRI GIS INTEGRATION MODULE SOFTWARE

The pipeline data acquisition system and TV inspection system shall be provided with a software module to allow bi-directional integration with ESRI's ArcGIS software. The ArcGIS integration module shall be supplied from an Authorized ESRI Business Partner to ensure compatibility with ArcGIS products. The software shall include an ArcGIS Integration wizard to synchronize assets between the data acquisition system and ArcGIS and shall include the following features (minimum):

ArcGIS Integration

The ArcGIS Integration shall provide the ability to:
- Import/export asset attribute and spatial information to/from the data acquisition system or ArcGIS from shape files, feature classes, or personal geo-databases.
- Import all or part of the asset attribute information from ArcGIS to populate the data acquisition systems' database.
- Select an asset on the map in the data acquisition system with a single mouse-click.
- Start an inspection from the selected asset on the map.
- Create a new project from a selected asset or a group of selected assets from the map in the data acquisition system.
- Locate a specific asset selected in the Project Navigator on the Map View in

the data acquisition system.
- Locate a specific asset selected on the Map View in the Project Navigator in the data acquisitions system.
- Filter by Main, Node, and/or Lateral asset attributes on the Map View.
- Estimate GIS coordinates on all main inspection observations (assuming a starting node coordinate exists)

Importing Asset Data from ArcGIS to the Data Acquisition System

- The software program shall include a feature that allows the user to import sewer main, sewer node, and lateral asset information from ArcGIS.
- User shall be able to select sewer main assets in GIS and, if needed, the related upstream and downstream sewer nodes and lateral assets, or selected sewer node assets of different types, and then import that data into the data acquisition system.
- User shall be able to import assets, lateral assets lengths, and other information into the data acquisition system.
- The asset shall be converted into data that is compatible with the geographic coordinate system.
- Both an "import" and "export" profile shall be provided in the software to strictly control the attributes exchanged between the systems. (the export profile shall be password protected)
- The "import" and "export" profiles shall allow for data type conversions when the source and destination field types are not the same. (i.e. allow for data type conversion of a float to an integer)
- Imported asset data from GIS, as well as exported asset data to GIS shall be filterable to bring in all asset data (full asset inventory) or just certain selected assets.
- If the asset does not exist in the data acquisition system or was not previously imported in the database, a new asset shall be created in the data acquisition system.
- If the asset already exists in the data acquisition system or was previously imported in the database, the asset attributes and spatial coordinates shall be updated to reflect the fields mapping properties.
- If the asset does not exist in the data acquisition system or was not previously imported into the database, the user shall be able to import only the new assets.

Map View Plug-In

- An ArcGIS map shall be displayed in the data acquisition system by selecting the map document file in the standard Open File dialog that supports MXD (Map Document) and PMF (Published Map) file types.
- The selected map file will immediately be loaded in the data acquisition system and saved as default in the plug-in options for future use.
- User shall able to select specific feature(s) on the map using the mouse.
- User shall be able to zoom to a specific asset that has been selected in the Project Navigator tree.
- User shall be able to zoom to a specific asset in the Project Navigator tree that has been selected on the map
- User shall be able to create a new project by selecting single or multiple assets on the map. ·User shall be able to start an inspection from an asset selected on the map.
- User shall be able to filter assets by Main, Node, or Lateral asset attributes on the Map
- User shall be able to create projects from filtered selections on the map.

Exporting Assets from the Data Acquisition System to ArcGIS

- The user shall be able to export and update selected sewer main assets and related upstream/downstream sewer nodes and lateral asset information to GIS and populate the GIS database.
- The database and software program shall be able to export asset data, inspection observations, and pipeline inspection scores to an ArcGIS 9.2 personal geo-database or ArcSDE files utilizing the network features to associate Sewer, Storm or combined Mains with corresponding Node and Lateral assets.
- The user shall be able to export all assets, new assets only, inspected assets only, or any another combination based on an attribute filter.
- The inspection software shall allow linear references to be created in GIS.
- System shall have the ability to export two types of assets:
- Attached - the assets that were imported from GIS or exported to GIS previously and stored with the ArcGIS ID information.
- Unattached - the assets that were created during the field inspection - i.e. assets created in the system that have not been stored with the ArcGIS ID information.

E.3 100% COMPLIES: YES
or
E.3 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

E.4 ARCGIS RUNTIME ENGINE SOFTWARE

E.4 100% COMPLIES: YES
or
E.4 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

E.5 SCORING MODULE SOFTWARE

The Scoring Module uses customizable mathematical formulas within the software to allow structural engineers, system owners, and supervisors to better rank and prioritize assets which need maintenance or structural rehabilitation attention. The module can allow the user to create predictive models to determine where and when pipeline failures are likely to happen - before they happen - to avert pollution events and to maintain high service levels for the community.

E.5 100% COMPLIES: YES
or
E.5 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

PART F: PORTABLE PUSH SYSTEM

F.1 A portable push system shall be provided for inspecting service laterals and/or pipelines of size 2" in diameter and larger. It shall be specifically designed to allow the camera to negotiate multiple tight 90-degree bends or a single tee connection in a 4 inch pipe. The system shall include the following equipment (minimum): Camera, Coiler, Control Unit, High-resolution LCD Monitor, Counter/ Titler, Digital Video Recording unit, TV cable / push rods and sonde. Unit shall be supplied to record the pipeline inspection.

The Camera

- Shall be provided with a housing of high strength, hard, anodized aluminum alloy and shall not exceed 1.5" in diameter and 3.5" in length.
- Shall be manufactured with solid state circuitry to withstand shocks and vibrations and shall be sealed for water protection
- Shall include a light head containing a minimum of 12 solid state white LED'S equaling 18.7 candela minimum.
- Built in lighting ring shall accommodate 2" to 8" pipe
- Shall include fixed focus, fixed iris, and auto speed shutter.
- Shall have a viewport of impact resistant, distortion free optical Pyrex glass.
- Geometric distortion of the image shall not exceed 2%.
- Shall have sensor with interline Transfer CCD - 1/3"
- Shall have Picture Elements (pixels) 768(H) - 494(V) with NTSC Color 525 lines, 60 fields/second (PAL Option Available) Scanning,30 frames, 2:1 Interface ,450+ resolution lines and S/N ratio greater than 46 db
- Shall have a ·15VDC, 175 Milliamps, power supply with overvoltage protection to protect the lighting.

The Coiler

- Shall be constructed of steel in a lightweight, open wire frame design.
- Shall be constructed to adequately store up to 300' of .176" push cable.
- Shall include a footage sensor located on the coiler basket.
- Shall be made easily portable with wheels.
- Shall include control unit and a monitor mounted on the coiler unit

The Control Unit

- Shall include a 12volt battery, housed in the Control Unit, to operate the specified small diameter color camera up to 4 hours. A built-in battery charger shall also be included.
- Shall be mounted in an aluminum housing attached to the side of the coiler.
- Shall include power supplies, variable light intensity control, camera power switch, and video IN/OUT jacks for external connections.
- Shall operate from an 85 volt to 264 volt AC, 50/60 Hz, or optional 12 volt DC power source.
- Electronics shall be weather-resistant to withstand operating conditions and extended outside storage.

The Monitor

- Shall include a built-in 6.4" (minimum) LCD display monitor with alpha/numeric data generator and video display unit.
- Shall be a solid state color unit and mounted on the coiler.
- Shall have the ability to tilt, swivel, and fold out to provide easy viewing. ·Shall have at least 1440 dots on each horizontal line.

- Shall be mounted to the coiler
- Shall be weather-resistant to withstand operating conditions and extended outside storage.

The Combo Counter/Titler

- Shall be a built in combination counter and titler
- Shall generated distance data and free form comment for display on the video monitor and recording on the DVR
- Shall have the ability to preset the footage on the distance counter to the desired length.
- Display Options shall include:
  White Text/Black Text
  Help Screens
  ·Display Modes such as free format, normal mode, input mode and arrow mode
  ·Display Off
  ·Trim Display
  ·Free Format
  ·Display Size
  ·Display Home
  ·Erase Line(s)
  ·Preset Distance
  .Selection of display modes and text positioning

The Digital Video Recording Unit

- Shall be 100% solid state digital recording unit
- Shall record Mpeg 4 digital videos directly to a provided minimum 16 GB thumb drive. Operations manual and a Quick Time (TM) player software program shall be provided on the thumb drive for video playback.
- Shall allow audio recording via audio line in connection.
- Shall allow played back via remote office PC or Laptop using Quick Time (TM) player.
- Shall offer three (3) video quality settings of Good (320X240), Better (640X480), Best (720X480). The video quality mode shall be displayed via LED lights.
- Shall create digital videos and allow multiple recordings to the provided 16 GB thumb drive.
- The Thumb Drive shall be easily accessed via USB 2 connection located on the DVR unit.

TV Cable/Push Rod

- Shall include One hundred feet (100') of 1/2-inch diameter integrated TV cable/push rod will be furnished to include the required connectors.
- Shall have a minimum of eight (8) conductors to supply power to the camera and lights, allow for future expansion features and to transmit the video signal along a shielded coaxial cable.
- Shall include a minimum .176 diameter fiberglass rod built into the center of the cable.
- Shall have abrasion resistant low drag coefficient nylon sheathing and shall be perfectly round to reduce resistance during use in the pipe.
- Shall cable end connector specifically designed to transfer the cable strength to the camera.
- Shall be equipped with a special flexible coupling to allow the camera to turn

and rotate to negotiate multiple 90 bends or a single tee connection.

Sonde

- Shall have a built in 512 HZ sonde transmitter.

F.1 100% COMPLIES: YES
or
F.1 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

PART G: POLE MOUNTED CAMERA WITH ZOOM WITH DV-1 LCD AND VEST

G.1 Provide a pole-mounted video inspection system designed to facilitate the internal inspection of manholes. The pole-mounted inspection system shall be designed to be operated by one person as a stand-alone inspection system or in conjunction with the proposed system specified in earlier Parts of this document. The system shall consist of the following (minimum) camera:

Camera Assembly

- Shall be generally configured to meet conditions of the specification set forth in the first paragraph of B1
- Shall feature a 420:1 (35 optical/12 digital) zoom with automatic focus
- Shall feature self-contained waterproof lighting for enhanced detailed viewing of cracks, breaks, pipe separations, scale, and various defect conditions from hundreds of feet away.
- Shall provide an electronic Video Image Stabilization (VIS) module to provide sharp and stable image resolution caused by operator movement or while zooming.
- 2 HID (High Intensity Discharge) lights (9.5w / 14w) ·Power consumption: 28W max 12V
- Field of View: ·55.8° (H) wide, 1.7° (H)
- Resolution Lines: 520+ TV lines horizontal
- Iris: Auto with manual override
- Electronic Shutter: 1/30,000 to 1/60 second
- Minimum Illumination: 1 lux
- Mechanics and electronics shall be housed in a high strength, watertight, damage resistant, anodized aluminum housing.
- Shall include a combined video/power cable to allow a video connection between the camera head assembly and video output to a VCR, monitor and/or digital video capture system for hard-wired video.
- Shall have a head that incorporates a full-range tilt design to allow below ground and overhead inspections.
- Shall have a Mount Assembly with Swivel Adjustment
- Shall be capable of swiveling to retain the desired position without requiring a secondary locking feature.
- Shall include a storage/shipping case for the camera head & accessories
- 16 GB thumb drive

The Digital Video Recording Unit

- Shall conform to the requirements of the same as set forth in F1.
- Removable case assembly that allows the sun shade to lock in place and

provides a handle for easy storage of the assembly when not in use

Hand Control Unit

- Shall be provided to control the lights and all camera functions.
- Shall include a monitor to conform to F1 above
- Shall be designed to fit into the battery vest controller pocket or a single hand held controller but shall not be mechanically attached, or built as part of the pole assembly.
- The hand controller shall incorporate keyed power, video connectors for easy
  connection.
- The Joy Pad controller shall allow simple one finger operation of focus, zoom and built-in menus. The hand controller shall offer Zoom in, Zoom Out, Focus near, Focus far via the joy pad controller and Power on/off functionality

Pole Assembly

- Shall be a lightweight 7'-8", carbon-fiber, adjustable, telescopic pole that has the ability to extend up to 24.5'.
- Shall have a maximum outer diameter of 1.50" and a maximum weight of 7.0 lbs.
- Length adjustment shall include low profile locking handle allowing easy one hand operation. The low profile locking system shall include a clamp guard that prevents accidental release.
- Shall include an adjustable guide rail to stabilize the camera. The stabilizer rod shall include pipe sizing guides allowing easy adjustment to the corresponding marking to pipe diameter. Full protection camera head and lens cover shall be provided for storage and transport
- Shall be provided with a single storage case for complete unit (less pole)

High Visibility Vest

- Shall be rated a minimum ANSI/ISEA 107-2004 Class 2 for visibility.
- Shall include a back side padded battery pouch, and custom DV/LCD Monitor unit with sun shade.
- Shall include a Removable Hand controller pouch with duel snap fasteners and redundant snap strap.
- Shall have adjustments for height, waist, and adjustments for the video screen
  placement per user preference
- Shall have padded shoulder supports

G.1 100% COMPLIES: YES

or

G.1 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

PART H: INSTRUCTION AND TESTING

H.1 The supplier shall fully instruct and test buyers in the operation of the equipment furnished after delivery. The instruction period shall be a minimum of 32 hours to fully familiarize the buyers operating personnel. The instruction and testing shall be conducted by the supplier's field service technician and shall include component familiarization, theory of operation, equipment operation, field procedures, techniques of use, troubleshooting, maintenance recording and logging of sewer conditions and safety procedures.

H.1 100% COMPLIES: YES
or
H.1 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

PART I: SUPPORT PLAN

I.5 The Enhanced Support Plan shall include one year minimum:

- Telephone support Monday through Friday, 8 AM to 5 PM EST ·Remote Online Technical Support*
- Access to online support services including FAQ's, Knowledge Base, User Forums and downloads.
- Access to pre-scheduled online training sessions that cover the base product as well as advanced user concepts and best practices.
- Free ongoing software maintenance Release Updates (Decimal Point Updates) available online for download including the latest technical documentation.
- Free ongoing 'major version' software Release Upgrades (Full Point Upgrades) available online for download including the latest technical documentation.

I.5 100% COMPLIES: YES
or
I.5 EXCEPTIONS: YES (Identify exceptions on form provided in Section 5)

PART J: TRADE VALUE

J.1 The City may desire to pursue trade value for its existing camera (to be determined); bidder shall submit trade value deduction for this unit.

J.1 100% COMPLIES: YES
or
J.1 EXCEPTIONS: YES
(Identify exceptions on form provided in Section 5)

SECTION 5
EXCEPTION DECLARATION FORM

Any bidder submitting a product or service with an exception to the specification as written in Section 3 shall clearly indentify the exception and provide explanation below.

Specification Reference	**Explain the Exception**

SECTION 6
GENERAL TERMS AND CONDITIONS FOR THE CITY OF HARRISONBURG, VA

6.1 **Purchasing and Contracting manual:** This solicitation is subject to the provisions of the Purchasing and Contracting Policy Manual for the City of Harrisonburg (City) and any revisions thereto, which are hereby incorporated into this contract in their entirety. A copy of the manual is available for review at the Purchasing Office and in the Finance office.

6.2 **APPLICABLE LAWS AND COURTS:** This solicitation and any resulting contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth. The contractor shall comply with all applicable federal, state and local laws, rules and regulations.

6.3 **ANTI-DISCRIMINATION:** By submitting their (bids/proposals), (bidders/offerors) certify to the City that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and § 11-51 of the *Virginia Public Procurement Act.*

In every contract over $10,000 the provisions below apply:

6.3.1 During the performance of this contract, the contractor agrees as follows:

a. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, religion, national origin, age, disability, or any other basis prohibited by state law relating to discriminiation in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscriminiation clause.

b. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.

c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulations shall be deemed sufficient for the purpose of meeting these requirements.

The contractor will include the provisions of 6.3.1 above in every subcontract or purchase order over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

6.4 **ETHICS IN PUBLIC CONTRACTING**: By submitting their (bids/proposals), (bidders/offerors) certify that their (bids/proposals) are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other (bidder/offeror), supplier, manufacturer or subcontractor in connection with their (bid/proposal), and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

6.5 **IMMIGRATION REFORM AND CONTROL ACT OF 1986**: By submitting their (bids/proposals), (bidders/offerors) certify that they do not and will not during the performance of this contract employ illegal alien workers or otherwise violate the provisions of the federal Immigration Reform and Control Act of 1986.

6.6 **DEBARMENT STATUS:** By submitting the (bids/proposals), (bidders/offerors) certify that they are not currently debarred by the Commonwealth of Virginia from submitting bids or proposals on contracts for the type of goods and/or services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.

6.7 **ANTITRUST**: By entering into a contract, the contractor conveys, sells, assigns, and transfers to the City all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by the City under said contract.

6.8 **MANDATORY USE OF CITY FORM AND TERMS AND CONDITIONS FOR IFBs AND RFPs**

6.8.1 (For Invitation For Bids:) Failure to submit a bid on the form provided, (if provided) shall be a cause for rejection of the bid. Modification of or additions to any portion of the Invitation for Bids may be cause for rejection of the bid; however, the City reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a bid as nonresponsive. As a precondition to its acceptance, the City may, in its sole discretion, request that the bidder withdraw or modify nonresponsive portions of a bid which do not affect quality, quantity, price, or delivery. No modification of or addition to the provisions of the contract shall be effective unless reduced to writing and signed by the parties.

6.8.2 (For Request For Proposals:) Failure to submit a proposal on the form provided, (if provided) shall be a cause for rejection of the bid. Modification of or additions to the General Terms and Conditions of the solicitation may be cause for rejection of the proposal; however, the City reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a proposal.

6.9 **CLARIFICATION OF TERMS:** If any prospective (bidder/offeror) has questions about the specifications or other solicitation documents, the prospective (bidder/offeror) should contact the person whose name appears on the face of the solicitation no later than five working days before the due date. Any revisions to the solicitation will be made only by addendum issued by the buyer.

6.10 **PAYMENT:**

6.10.1. To Prime Contractor:

a. Invoices for items ordered, delivered and accepted shall be submitted by the contractor directly to the payment address shown on the purchase order/contract. All invoices shall show the purchase order number; social security number (for individual contractors) or the federal employer identification number (for proprietorships, partnerships, and corporations).

b. Any payment terms requiring payment in less than 30 days will be regarded as requiring payment 30 days after invoice or delivery, whichever occurs last. This shall not affect offers of discounts for payment in less than 30 days, however.

c. All goods or services provided under this contract or purchase order, that are to be paid for with public funds, shall be billed by the contractor at the contract price.

d. The following shall be deemed to be the date of payment: the date of postmark in all cases where payment is made by mail, or the date of offset when offset proceedings have been instituted as authorized under the Virginia Debt Collection Act.

e. **Unreasonable Charges**. Under certain emergency procurements and for most time and material purchases, final job costs cannot be accurately determined at the time orders are placed. In such cases, contractors should be put on notice that final payment in full is contingent on a determination of reasonableness with respect to all invoiced charges. Charges which appear to be unreasonable will be researched and challenged, and that portion of the invoice held in abeyance until a settlement can be reached. Upon determining that invoiced as to those charges which it considers unreasonable and the basis for the determination. A contractor may not institute legal action unless a settlement cannot be reached within thirty (30) days of notification. The provisions of this section do not relieve the City of its prompt payment obligations with respect to those charges which are not in dispute (Code of Virginia, § 11-69).

6.10.2. To Subcontractors:

a. A contractor awarded a contract under this solicitation is hereby obligated:

(1) To pay the subcontractor(s) within seven (7) days of the contractor's receipt of payment from the City for the proportionate share of the payment received for work performed by the subcontractor(s) under the contract; or

(2) To notify the City and the subcontractor(s), in writing, of the contractor's intention to withhold payment and the reason.

b. The contractor is obligated to pay the subcontractor(s) interest at the rate of one percent per month (unless otherwise provided under the terms of the contract) on all amounts owed by the contractor that remain unpaid seven (7) days following receipt of payment from the City, except for amounts withheld as stated in (2) above. The date of mailing of any payment by U. S. Mail is deemed to be payment to the addressee. These provisions apply to each sub-tier contractor performing under the primary contract. A contractor's obligation to pay an interest charge to a subcontractor may not be construed to be an obligation of the City.

6.11 **PRECEDENCE OF TERMS:** General Terms and Conditions shall apply in all instances. In the event there is a conflict between any of the other General Terms and Conditions and any Special Terms and Conditions in this solicitation, the Special Terms and Conditions shall apply.

6.12 **QUALIFICATIONS OF (BIDDERS/OFFERORS):** The City may make such reasonable investigations as deemed proper and necessary to determine the ability of the (bidder/offeror) to perform the services/furnish the goods and the (bidder/offeror) shall furnish to the City all such information and data for this purpose as may be requested. The City reserves the right to inspect (bidder's/offeror's) physical facilities prior to award to satisfy questions regarding the (bidder's/offeror's) capabilities. The City further reserves the right to reject any (bid/ proposal) if the evidence submitted by, or investigations of, such (bidder/offeror) fails to satisfy the City that such (bidder/offeror) is properly qualified to carry out the obligations of the contract and to provide the services and/or furnish the goods contemplated therein.

6.13 **TESTING AND INSPECTION:** The City reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications.

6.14 **ASSIGNMENT OF CONTRACT:** A contract shall not be assignable by the contractor in whole or in part without the written consent of the City.

6.15 **CHANGES TO THE CONTRACT:** Changes can be made to the contract in any of the following ways:

6.15.1 The parties may agree in writing to modify the scope of the contract. An increase or decrease in the price of the contract resulting from such modification shall be agreed to by the parties as a part of their written agreement to modify the scope of the contract.

6.15.2 The Purchasing Agent or City delegated agent may order changes within the general scope of the contract at any time by written notice to the contractor. Changes within the scope of the contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. The contractor shall comply with the notice upon receipt. The contractor shall be compensated for any additional costs incurred as the result of such order and shall give the Purchasing Agency a credit for any savings.

6.16 **DEFAULT:** In case of failure to deliver goods or services in accordance with the contract terms and conditions, the City, after due oral or written notice, may procure them from other sources and hold the contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies, which the City may have.

6.17 **TAXES:** Sales to the City of Harrisonburg are normally exempt from State sales tax. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request. **(NOT NORMALLY REQUIRED FOR SERVICE CONTRACTS)**

6.18 **USE OF BRAND NAMES:** Unless otherwise provided in this solicitation, the name of a certain brand, make or manufacturer does not restrict (bidders/offerors) to the specific brand, make or manufacturer named, but conveys the general style, type, character, and quality of the article desired. Any article which the public body, in its sole discretion, determines to be the equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted. The (bidder/offeror) is responsible to clearly and specifically identify the product being offered and to provide sufficient descriptive literature, catalog cuts and technical detail to enable the City to determine if the product offered meets the requirements of the solicitation. This is required even if offering the exact brand, make or manufacturer specified. Normally in competitive sealed bidding only the information furnished with the bid will be considered in the evaluation. Failure to furnish adequate data for evaluation purposes may result in declaring a bid nonresponsive. Unless the (bidder/offeror) clearly indicates in its (bid/proposal) that the product offered is an “equal” product, such (bid/proposal) will be considered to offer the brand name product referenced in the solicitation.**(NOT NORMALLY REQUIRED FOR SERVICE CONTRACTS)**

6.19 **TRANSPORTATION AND PACKAGING:** By submitting their (bids/proposals), all (bidders/offerors) certify and warrant that the price offered for FOB destination includes only the actual freight rate costs at the lowest and best rate and is based upon the actual weight of the goods to be shipped. Except as otherwise specified herein, standard commercial packaging, packing and shipping containers shall be used. All shipping containers shall be legibly marked or labeled on the outside with purchase order number, commodity description, and quantity.**(NOT NORMALLY REQUIRED FOR SERVICE CONTRACTS)**

6.20 **INSURANCE:** By signing and submitting a bid or proposal under this solicitation, the bidder or offeror certifies that if awarded the contract, it will have insurance coverages at the time the contract is awarded. For construction contracts, if any subcontractors are involved, the subcontractor will have workers' compensation insurance in accordance with §§ 11-46.3 and 65.2-800 et seq. of the *Code of Virginia*. The bidder or offeror further certifies that the contractor and any subcontractors will maintain these insurance coverages during the entire term of the contract and that all insurance coverages will be provided by insurance companies authorized to sell insurance in Virginia by the Virginia State Corporation Commission. **(NOT NORMALLY REQUIRED FOR GOODS CONTRACTS. INSURANCE IS REQUIRED WHEN WORK IS TO BE PERFORMED ON CITY OWNED OR LEASED FACILITIES OR PROPERTY.)**

6.21 **SELECTION PROCESS/AWARD:** Upon the award or the announcement of the decision to award a contract as a result of this solicitation, the department will publicly post such notice for a minimum of ten (10) days, or will notify all responsive bidders/offerors in writing by mail.

6.22 **BID/PROPOSAL ACCEPTANCE PERIOD:** Any bid/proposal resulting from this solicitation shall be valid for (30) days. At the end of the (30) days the bid/proposal may be withdrawn at the written request of the Bidder/Offeror. If the bid or proposal is not withdrawn at that time it remains in effect until an award is made or the solicitation is canceled.

6.23 **EXCUSABLE DELAY:** The City shall not be in default of any failure in performance of this agreement in accordance with its terms if such failure arises out of causes beyond its reasonable control and without the fault of or negligence of the City. Such causes may include, but are not restricted to acts of God or the public enemy, fires, flood, epidemics, quarantine restrictions, strikes, freight embargoes, and usually severe weather, but in every case the failure to perform must be beyond the reasonable control and without the fault or negligence of the City.

6.24 **DRUG-FREE WORKPLACE:** During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful

manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

6.25 **COOPERATIVE PROCUREMENT:** This procurement is being conducted on behalf of other public bodies, in accordance with 2.2-4304 (A) of the Code of VA. The successful bidder has the option to provide these same items (services), except architectural and engineering services, at the same prices, awarded as a result of this solicitation to any public body within the Commonwealth of Virginia. If any other Public body decides to use the final contract, the contractor(s) must deal directly with that public body concerning the placement of orders, issuance of the purchase orders, contractual disputes, invoicing and payment. Failure to extend a contract to any public body will have no effect on consideration of your bid.

6.26 **STATE CORPORATION COMMISSION IDENTIFICATION NUMBER:** Pursuant to Code of VA 2.2-4311.2 subsection B, a bidder or offeror organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 is required to include in its bid or proposal the identification number issued to it by the State Corporation Commission (SCC). Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law is required to include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized.

6.27 **The City does not discriminate against small and minority businesses or faith-based organizations.**

State Corporation Commission Form (Return with Bid)

<u>Virginia State Corporation Commission ("SCC") registration information</u>: **The undersigned Offeror:**

□ is a corporation or other business entity with the following SCC identification number: _____ **-OR-**

□ is not a corporation, limited liability company, limited partnership, registered limited liability partnership, or business trust **-OR-**

□ is an out-of-state business entity that does not regularly and continuously maintain as part of its ordinary and customary business any employees, agents, offices, facilities, or inventories in Virginia (not counting any employees or agents in Virginia who merely solicit orders that require acceptance outside Virginia before they become contracts, and not counting any incidental presence of the Offeror in Virginia that is needed in order to assemble, maintain, and repair goods in accordance with the contracts by which such goods were sold and shipped into Virginia from bidder's out-of-state location) **-OR-**

□ is an out-of-state business entity that is including with this bid an opinion of legal counsel which accurately and completely discloses the undersigned Offeror's current contacts with Virginia and describes why those contacts do not constitute the transaction of business in Virginia within the meaning of § 13.1-757 or other similar provisions in Titles 13.1 or 50 of the Code of Virginia.

****NOTE** >>** Check the following box if you have not completed any of the foregoing options but currently have pending before the SCC an application for authority to transact business in the Commonwealth of Virginia and wish to be considered for a waiver to allow you to submit the SCC identification number after the due date for proposals (the Commonwealth reserves the right to determine in its sole discretion whether to allow such waiver):

Signature: _____ Date: _____

Name: _____
Print

Title: _____

Name of Firm: _____